No. 4391—*San.* 76-09-3, *dated* 24*th November* 1909.

The following extract from the resume of Professor Koch, regarding his views on the prevention of plague, is hereby published for general information.

By Order,
K. MYLAR RAO,
For *Secy. to Govt.*

Professor Koch's views on the prevention of Plague.

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"The rat is the chief agent in the diffusion of plague, and our preventive measures must be based on this principle. The encouragement of the destruction of rats, as early practiced in Japan, is an eminently proper procedure, but in the extermination of animals of such great reproductive power the use of artificial methods, like mechanical devices and poisonous drugs, must prove laborious, expensive, and at the same time comparatively inefficient. On the other hand, in the natural world, the mutual relations of living things is extremely intricate and subtle, and by paying attention to this point we may discover natural methods of dealing with this problem, the limited powers of man being far inferior to the boundless resources of nature.

"Permit me to cite two or three instances of the very successful utilization of the natural correlation between living beings which may, by analogy, serve to illustrate the proper means to be employed in the work of demurization. Some years ago an amateur botanist admiring its pretty flowers introduced a verbenaceous plant called lantana from America into the Hawaiian Islands. Through the agency of birds its seeds were distributed broadcast. It soon became disseminated throughout the entire group of islands as a harmful weed to the great detriment of agriculture. In its native land, Mexico, this plant does not flourish to the same disastrous extent. At the end of a careful investigation it was discovered that there exists in Mexico a species of small fly called Agromyza, which deposits its eggs within the seeds of the lantana and thus checks increase of the plant. The fly was introduced into Hawaii and propagated, with the result that in a few years the omnipresent lantana pest showed signs of diminution.

"Another remarkable example is found in the Perkinsiella Saccharicida, a species of leaf-hopper injurious to the sugar-cane in the Hawaiian Islands. This insect is parasitic on the stalk and leaves of the sugar-cane, extracting the juice, and is a source of such great damage that in the period of four years, between 1901 and 1904, the amount of loss occasioned by it reached the enormous sum of several million dollars. On this account the Sugar Planters' Association established an experiment station, and despatched specialists to distant parts of the world for the purpose of investigating methods for the destruction of injurious insects and of searching for an enemy of this insect. Thus there was discovered in Australia a species of ant-like animal named aphanomerus pusillus parasitic within the egg mass of the leaf hopper. This beneficial insect was introduced into Hawaii in the year 1904, and propagated with the result that the great insect pest of the sugar-cane, Perkinsiella, has shown a remarkable diminution, and no longer causes the damage of former years. These two instances prove how beneficial to human activity is the study of the mutual interdependence between living beings in the realm of nature.

"Again, in Japan, we find that as a consequence of increasing interest in fruit culture foreign apple trees have been imported from America and assiduously cultivated. Nevertheless through the ravages of the woolly APHIS, which was introduced at the same time, I learn that at present throughout the Tohoku District scarcely a single healthy fruit tree can be found. This condition of affairs is clearly due to an imperfect knowledge of the inter-relation existing in the natural world.

"Successful demurization must be based on this principle, namely, the seeking out and the utilization of the natural enemies of the rat. From an early date I have been carrying on researches regarding the enemies of rats, and have used in my experiments a number of voracious animals, among them the ichneumon of Egypt, the mongoose of India, as well as the common European ferret. As well as devouring rats these animals attack domestic poultry, so that their beneficial effects are off-set by the loss they occasion, and their practical value is nil. On the other hand, from ancient times, cats have been the most common and best known to man of the enemies of the rat. When properly trained, they do us no harm, and are in all respects most fitted for the task before us. Though these facts are familiar to every one, they have not yet been practically utilized in the prophylaxis of plague. Random researches in distant lands will not necessarily lead to the successful accomplishment of our object. The most useful things are rather to be found among the commonplace and the readily accessible, as in this instance.

"However, in employing cats for this purpose we should determine a certain system, and follow it out in an orderly manner, in the main as follows :—

"1. Pass laws requiring each house to keep a certain number of cats and cause the police to make frequent inspections.

"2. By establishing a system of prizes, seek for cats of approved ability as ratters.

"3. Carry on a world-wide search for strains of cats especially skilled as ratters and encourage their introduction and propagation.

"4. We should stimulate interest in the breeding of improved strain of cats by promoting cat shows, etc., just as in the case of horses and cattle.

"5. Vessels plying between plague-infected ports should be obliged to carry a fixed number of cats, the number depending upon the tonnage of the vessels.

"6. Building regulations should require that attics and other places frequented by rats be provided with opening large enough to admit cats.

"7. In the case of plague-infected districts or areas threatened with invasion by plague, special companies of cats should be organized and at fixed intervals they should be isolated and the presence or absence of plague among them should be determined.

"The above is merely a sketch in rough detail of a scheme for employing cats in antipest work. The method is extremely easy of execution and by no means involves great expense. Further, as its efficacy is not merely of temporary duration, we should eventually accomplish our object of exterminating the rat. Moreover, during the time of a plague epidemic, the trouble involved in rat examinations should be lessened. If from time to time we isolate and keep under observation the cats that have been feeding upon rats, not only do we obviate any fear of spreading the infection, but at the same time we have a means of determining the exact extent of the spread of the disease.

"Since a multitude of artificial devices of human contrivances are not equal in efficiency to one of nature's methods in destroying rats, during antipest campaigns, the most efficacious means of accomplishing our object is the utilization of the cat."